

WHAT IS CLAIMED IS:

1. A gear-jumping-proof positive-locking clutch configured to connect a motor-vehicle transmission shaft to a transmission component mounted coaxially and rotatably with respect to the transmission shaft, comprising:

at least one axially displaceable locking roller element;  
and

an axially displaceable sliding sleeve configured to support the at least one locking roller element;

wherein the at least one locking roller element is displaceable into a radial locking recess in accordance with a radial force component with axial displacement of the sliding sleeve, the locking roller element located in the locking recess at a time of establishment of the connection between the vehicle transmission shaft and the transmission component, the positive-locking clutch being free of synchromesh bodies.

2. The positive-locking clutch according to claim 1, wherein the transmission component includes one of an idler gear and a locking ring.

3. The positive-locking clutch according to claim 1, wherein the locking roller element is supported primarily in a radial direction on the sliding sleeve in an engaged state of the positive-locking clutch.

4. The positive-locking clutch according to claim 1, wherein the sliding sleeve includes an inclined area configured to introduce the radial force component into the locking roller element.

5. The positive-locking clutch according to claim 1, wherein the locking roller element is configured to roll on a synchromesh body connected in a rotationally fixed manner to the vehicle transmission shaft by a shaft-hub connection.

6. The positive-locking clutch according to claim 1, further comprising a roller element support rotationally fixed and axially displaceable with respect to the vehicle transmission shaft, the locking roller element guidable inside the roller element support.

7. The positive-locking clutch according to claim 6, wherein the roller element support includes an axially aligned support gearing constantly engaging a shaft gearing arranged in a rotationally fixed manner with respect to the vehicle transmission shaft, the support gearing in a disengaged state rotatable with respect to the transmission component and, in an axially displaced and clutched state of the positive-locking clutch, engaged in a gearing of the transmission component.

8. The positive-locking clutch according to claim 6, wherein the transmission component is arranged fixedly on a gearbox.

9. The positive-locking clutch according to claim 8, wherein the transmission component includes an end gearing corresponding to an end gearing of the roller element support.

10. The positive-locking clutch according to claim 8, wherein the transmission component accommodates a bearing ring of a bearing of the vehicle transmission shaft.

11. The positive-locking clutch according to claim 8, wherein the transmission component is configured in one piece with a bearing ring that supports the vehicle transmission shaft.

12. The positive-locking clutch according to claim 1, wherein the positive-locking clutch is arranged axially between a first transmission component and a second transmission component.

13. The positive-locking clutch according to claim 12, wherein at least one locking roller element is provided for each of the transmission components.

14. The positive-locking clutch according to claim 13, wherein the locking roller elements corresponding to the first transmission components are arranged alternately with the locking roller elements corresponding to the second transmission component.